

Traditional censuses versus alternatives

1. Background

There are many reasons for conducting Censuses of Population. At the most fundamental level a census provides a population headcount at national level. Depending on how the census is organised, this national total may be broken down by detailed geographic area. Indeed, the taking of a census may even be enshrined in the Constitution of a country for the purposes of determining political representation. In addition, budgetary allocations invariably hinge on census outcomes. However, notwithstanding the legal or quasi-legal nature of the census objectives at national level, the richness of the data provided and the small area dimension of the census are its greatest assets. Against this backdrop therefore the decision as to the best means of conducting the census is one which national statistical institutes do not take lightly.

At opposite ends of the methodological spectrum are traditional censuses and those carried out using registers. In between are various combinations of the two i.e. mixed models, supplemented in some cases by sample surveys. Traditional censuses are commonly taken to mean those in which members of the public are requested to respond to a census questionnaire and where a field force of enumerators is involved in the field operation either delivering blank forms or collecting completed ones, or both. In its purest form a register-based census will, through the use of various statistical techniques, combine results from existing administrative registers at the micro level to produce census type information.

Which is the best method to use? What considerations should inform our decisions? What price accurate statistics? These are some of the questions addressed in the remainder of this brief note.

2. Have traditional censuses had their day?

Staging a traditional census is a multi-faceted project involving some or all of the following components:

- Holding a census pilot to test new question wordings or amendments to existing ones.
- Getting Government agreement to the final census questions.
- Determining appropriate census geography to ensure manageable work-loads for enumerators.
- Recruiting and training a field force to carry out the census.
- Handling support activities such as field force payments, warehousing, transportation, logistics.
- Conducting a public awareness campaign to highlight the importance of the census and the need to comply with its provisions.
- Using technology to ensure the speedy processing of the information returned on the census forms.
- Making the results available as speedily as possible using up to date methods which are responsive to users' needs.

Cost is normally cited as the main disadvantage of the traditional census. Indeed this has now almost become part of the lore in some international organisations with NSIs being admonished

to move to the more enlightened (and cheaper) register based approach. If this assertion is repeated often enough then traditional censuses may just eventually be seen as a bad thing. However, while not wishing to downplay the importance of cost, the investment made (and that is precisely what expenditure on a census is) has to be viewed in the context of the likely benefits which will flow from this investment. As it is not possible to formulate policy in a vacuum, the provision of comprehensive and timely information, such as that provided by the census, is a pre-requisite for informed decision making. It is highly questionable whether a move to a less preferred (and maybe less accurate) method of carrying out the census in order to reduce expenditure is the most cost effective solution in the longer term.

So, precisely what are the advantages of traditional censuses? First is the fact that the NSI has control over the operation which means that it can be organised in a streamlined and uniform manner conducive to optimising its statistical potential. The comprehensive nature of the census in terms of topic coverage should not lightly be overlooked when compared with some of the alternative approaches. And there is the positive spin-off which the census generates for official statistics in general, through its public awareness campaign. As well as engendering a sense of national participation it presents an opportunity to the NSI through its spokespersons to highlight the importance of objective and timely statistics for society at large.

On the downside is the aforementioned cost argument, which cannot be ignored especially when public finances are under pressure. To illustrate that cost is a real issue there are many instances of censuses being cancelled because of budgetary cut-backs. This happened in Ireland in the mid-seventies, unfortunately (with the benefit of hindsight) at a time of major demographic change.

A successful census field operation requires not alone detailed and painstaking planning but also a modicum of good luck. This was singularly absent in the case of the planned 2001 census in Ireland when because of the precautions in place to prevent the spread of foot and mouth disease it was decided to postpone the census for a year. The revised census date is 28 April 2002.

Respondent burden is also a real issue to be contended with. On the basis of crude estimates, the opportunity cost of completing the Irish census questionnaire may be as high as a quarter of the overall census budget. However, this is part of the price to be paid for quality information for policy formulation and assessment.

The fact that censuses are carried out infrequently gives rise to major organisational headaches. However, if they are carried out every five years, as is the case in Ireland, then the institutional memory both in the statistical office and in the field means that the learning curve is not quite as steep as it otherwise would be if starting from scratch every ten years.

Finally, traditional censuses are finding it hard to grapple with certain sub-populations such as the single young mobile population, people living in ghettos or shanty towns and marginalised sections of the community. While these groups pose major problems for census takers it is unlikely whether any other method of enumerating them would be any more effective.

3. Administrative registers – a statistical panacea?

The major positive factor associated with using administrative registers for statistical purposes is the fact that the same information is not collected more than once. Where recourse can be had to existing data holdings then, depending on their quality and coverage, they can be collated in order to make them amenable to statistical reporting. They can also be merged with other data sources in order to optimise the output being produced. This reduces the burden on the respondent by making use of whatever data is already in the system. The immediate saving is financial. Costly field procedures are avoided and most effort is concentrated on improving the quality of the registers themselves and using relevant statistical techniques to derive the required output.

The NSI has greater control as well over timing issues. In theory data sets can be merged at any time allowing great flexibility in terms of reference date and periodicity.

However, there may be drawbacks to using administrative registers as a source of statistical data. At the basic level is the degree of compliance with the register on the part of the public. This has an impact on both the coverage of the register and on the accuracy of the information contained in it. Where the administrative rationale for registering correctly and on time is strong then the accuracy of the register is likely to be high. But is this always the case? In societies which are highly regulated the public may be used to and accept the need to register for various public schemes. Even in these cases there may be reasons why individuals would not want to register. A lot depends therefore on the degree to which the administration maintains its register and sorts out its shortcomings.

A definite drawback is that the information provided may not be precisely what is required for statistical purposes. In some cases no information at all may be available on certain topics. However, it is a choice for the NSI to either settle for what may be a sub-optimal source of data because of cost considerations or to mount a statistical operation which will have direct financial and indirect response burden implications.

The public also has to be assured of the confidentiality of the statistical process. In other words they have to understand the distinction that individual identifiable data on administrative registers may be used by the NSI for statistical purposes (indeed merged with other such data) but that no such information passes from the statistical office to any outside agency (the so-called one-way street). Not alone do they have to understand such subtleties but they also have to implicitly trust the NSI to do the right thing. Direct statistical inquiries have the merit that the methods used can be easily understood by members of the public. Complex data merging and register cleaning does not have the same simplicity.

The way forward

Censuses are national instruments paid for out of tax payers' money. It is for the countries themselves to determine what offers the best value for money, taking account of factors such as direct financial cost, data quality, burden on respondents, public acceptability etc. Indeed in

some countries there may be no real choice as the traditional census may have fallen into disrepute for various historical reasons.

Where the choice exists between mounting an expensive field operation or using excellent data from registers then this will be a simple matter. However, life is rarely that simple. In countries where good administrative data is limited it may not be feasible either politically or culturally to rectify the situation in the short term. Neither, is it sufficient to say that registers should be put in place in order to reduce the cost of collection of statistics. Experience shows that there has to be a very strong administrative rationale for developing and maintaining register based information. Without that the level of compliance by the public will render any information which may flow from the register to be of limited use for statistical purposes.

The real choice is not between one end of the spectrum and the other (i.e. traditional versus register). In reality many NSIs use combinations of direct collection and administrative information. For instance, use may be made of a national address databases to assist in the field operation. Ultimately, NSIs are accountable for the money they spend. They therefore have to justify to Government that the census will be carried out in the most cost-effective way possible. If the Government sanctions this expenditure (even if it is the cost of conducting a traditional census) it does so bearing in mind that it is an investment in the knowledge necessary to be able to formulate public policies which are well informed and of long term benefit to citizens.